

AMENDMENTS TO AND LISTING OF THE CLAIMS

This listing of the claims will replace all prior versions and listings of the claims in this application.

Please amend the claims as follows:

1-17. (Canceled).

18. (Previously presented) A process for preparing microspheres comprising an ionically crosslinked polymer, the process comprising:

- (a) producing liquid aerosol droplets from a solution comprising an ionically crosslinkable polyionic polymer into a continuous gas stream by using an ultrasonic nebulizer;
- (b) transferring the gas stream into a gelling solution comprising di-, multi- or polyvalent ions, whereby crosslinked polymer microspheres are formed, and
- (c) separating the microspheres from the gelling solution.

19. (Previously presented) The process according to claim 18, wherein the ionically crosslinkable polymer is a polyanionic polymer and wherein the gelling solution comprises a polyvalent cation.

20. (Previously presented) The process according to claim 19, wherein the polyvalent cation of the gelling solution is selected from the group consisting of poly (allylamine hydrochloride), poly(ethylene imine), poly(diallyldimethylammonium chloride), polyamide-polyamine-epichlorhydrine, chitosan, amino-dextran, and protamine sulfate.

21. (Previously presented) The process according to claim 18, wherein the ionically crosslinkable polymer is a polyanionic polymer and wherein the gelling solution comprises di-, multi- or polyvalent cations.

22. (Previously presented) The process according to claim 21, wherein the polyanionic polymer is selected from the group consisting of anionic polysaccharides, a linear or branched polyacrylic acid, and polystyrene sulfonate.

23. (Previously presented) The process according to claim 22, wherein the anionic polysaccharide is selected from the group consisting of an alginic acid, a carrageenan, a cellulose sulphate, a dextran sulphate, a gellan, a pectin and water soluble salts thereof.

24. (Previously presented) The process according to claim 23, wherein the anionic polysaccharide is an alginic acid or a water soluble salt thereof.

25. (Previously presented) The process according to claim 21, wherein, in step (a), the polyanionic polymer is present in a concentration of from 0.1 % to 5.0 % by weight.

26. (Previously presented) The process according to claim 21, wherein the ion of the gelling solution is a metal cation selected from the group consisting of Pb^{2+} , Cu^{2+} , Ba^{2+} , Sr^{2+} , Cd^{2+} , Ca^{2+} , Zn^{2+} , Co^{2+} , and Ni^{2+} .

27. (Previously presented) The process according to claim 26, wherein the metal cation of the gelling solution is selected from the group consisting of Ba^{2+} , Sr^{2+} , and Ca^{2+} .

28. (Previously presented) The process according to claim 27, wherein the metal cation of the gelling solution is Ca^{2+} .

29. (Previously presented) The process according to claim 18, wherein the gelling solution additionally comprises up to 1 % by weight of a surfactant.

30. (Previously presented) The process according to claim 29, wherein the surfactant is present in an amount of from 0.02 to 1.0 % by weight.

31. (Previously presented) The process according to claim 29, wherein the surfactant is selected from the group consisting of polyoxyethylene-sorbitans and surfactants comprising a block copolymer of ethylene oxide and/or propylene oxide.

32. (Previously presented) The process according to claim 18, wherein the temperature of the solution of the ionically crosslinkable polyionic polymer according to step (a) is kept within a temperature of from 15 to 50°C.

33. (Previously presented) The process according to claim 21, wherein, in step (a), the solution comprises of from 0.75 % to 1.5 % by weight low viscosity sodium alginate, wherein the cation is Ca²⁺; and wherein the gelling solution comprises of from 0.05 % to 0.15 % by weight of poly(oxyethylene)20-sorbitane monolaureate.

34. (Withdrawn) A system for preparing microspheres comprising an ionically crosslinked polymer, the system comprising:

- (a) an ultra sound generator situated in a nebulizing chamber which is filled with a solution comprising an ionically crosslinkable polymer;
- (b) a radiator coil attached to the nebulizing chamber;
- (c) a gas inlet attached to the nebulizing chamber;
- (d) a vessel for the gelling solution, equipped with agitation means; and
- (e) a transfer tubing attached to the nebulizing chamber, connecting nebulizing chamber and vessel, wherein the tubing is adapted to submerge into the gelling solution.

35. (Previously presented) The process according to claim 18, further comprising:

- (d) filtering the micro spheres through a screen.

36. (Previously presented) The process according to claim 30, wherein the surfactant is present in an amount of from 0.05 to 0.15% by weight.

37. (Previously presented) The process according to claim 32, wherein the temperature of the solution of the ionically crosslinkable polyionic polymer according to step (a) is kept within a temperature of from 25 to 35°C.

38. (Withdrawn) The system according to claim 34, further comprising:

(f) means for keeping the gas-fluid level in the nebulizing chamber at a predetermined constant level.

39. (New) A process for preparing microspheres comprising an ionically crosslinked polymer, the process comprising:

- (a) producing liquid aerosol droplets from a solution comprising an ionically crosslinkable polyionic polymer into a continuous gas stream by using an ultrasonic nebulizer;
- (b) submerging the gas stream via a tubing comprising dispenser holes into a gelling solution comprising di-, multi- or polyvalent ions, whereby crosslinked polymer microspheres are formed, and
- (c) separating the microspheres from the gelling solution.

40. (New) The process according to claim 39, wherein the ionically crosslinkable polymer is a polyanionic polymer and wherein the gelling solution comprises a polyvalent cation.

41. (New) The process according to claim 40, wherein the polyvalent cation of the gelling solution is selected from the group consisting of poly (allylamine hydrochloride), poly(ethylene imine), poly(diallyldimethylammonium chloride), polyamide-polyamine-epichlorhydrine, chitosan, amino-dextran, and protamine sulfate.

42. (New) The process according to claim 39, wherein the ionically crosslinkable polymer is a polyanionic polymer and wherein the gelling solution comprises di-, multi- or polyvalent cations.

43. (New) The process according to claim 42, wherein the polyanionic polymer is selected from the group consisting of anionic polysaccharides, a linear or branched polyacrylic acid, and polystyrene sulfonate.

44. (New) The process according to claim 43, wherein the anionic polysaccharide is selected from the group consisting of an alginic acid, a carrageenan, a cellulose sulphate, a dextran sulphate, a gellan, a pectin and water soluble salts thereof.

45. (New) The process according to claim 44, wherein the anionic polysaccharide is an alginic acid or a water soluble salt thereof.

46. (New) The process according to claim 42, wherein, in step (a), the polyanionic polymer is present in a concentration of from 0.1 % to 5.0 % by weight.

47. (New) The process according to claim 42, wherein the ion of the gelling solution is a metal cation selected from the group consisting of Pb^{2+} , Cu^{2+} , Ba^{2+} , Sr^{2+} , Cd^{2+} , Ca^{2+} , Zn^{2+} , Co^{2+} , and Ni^{2+} .

48. (New) The process according to claim 47, wherein the metal cation of the gelling solution is selected from the group consisting of Ba^{2+} , Sr^{2+} , and Ca^{2+} .

49. (New) The process according to claim 48, wherein the metal cation of the gelling solution is Ca^{2+} .

50. (New) The process according to claim 39, wherein the gelling solution additionally comprises up to 1 % by weight of a surfactant.

51. (New) The process according to claim 50, wherein the surfactant is present in an amount of from 0.02 to 1.0 % by weight.

52. (New) The process according to claim 50, wherein the surfactant is selected from the group consisting of polyoxyethylene-sorbitans and surfactants comprising a block copolymer of ethylene oxide and/or propylene oxide.

53. (New) The process according to claim 39, wherein the solution of the ionically crosslinkable polyionic polymer according to step (a) is kept within a temperature of from 15 to 50°C.

54. (New) The process according to claim 42, wherein, in step (a), the solution comprises of from 0.75 % to 1.5 % by weight low viscosity sodium alginate, wherein the cation is Ca²⁺; and wherein the gelling solution comprises of from 0.05 % to 0.15 % by weight of poly(oxyethylene)20-sorbitane monolaureate.

55. (New) The process according to claim 39, further comprising:
(d) filtering the micro spheres through a screen.

56. (New) The process according to claim 51, wherein the surfactant is present in an amount of from 0.05 to 0.15% by weight.

57. (New) The process according to claim 53, wherein the solution of the ionically crosslinkable polyionic polymer according to step (a) is kept within a temperature of from 25 to 35°C.

58. (New) A process for preparing microspheres comprising an ionically crosslinked polymer, the process comprising:

- (a) producing liquid aerosol droplets from a solution comprising a polyanionic polymer and from 0.75 % to 1.5 % by weight low viscosity sodium alginate into a continuous gas stream by using an ultrasonic nebulizer;
- (b) submerging the gas stream into a gelling solution comprising Ca²⁺ and from 0.05 % to 0.15 % by weight of poly(oxyethylene)20-sorbitane monolaureate, whereby crosslinked polymer microspheres are formed, and
- (c) separating the microspheres from the gelling solution.

59. (New) The process according to claim 58, wherein the gelling solution additionally comprises up to 1 % by weight of a surfactant.
60. (New) The process according to claim 59, wherein the surfactant is present in an amount of from 0.02 to 1.0 % by weight.
61. (New) The process according to claim 59, wherein the surfactant is selected from the group consisting of polyoxyethylene-sorbitans and surfactants comprising a block copolymer of ethylene oxide and/or propylene oxide.
62. (New) The process according to claim 58, wherein the solution according to step (a) is kept within a temperature of from 15 to 50°C.
63. (New) The process according to claim 58, further comprising:
- (d) filtering the micro spheres through a screen.
64. (New) The process according to claim 59, wherein the surfactant is present in an amount of from 0.05 to 0.15% by weight.
65. (New) The process according to claim 62, wherein the solution according to step (a) is kept within a temperature of from 25 to 35°C.
66. (New) A process for preparing microspheres comprising an ionically crosslinked polymer, the process comprising:
- (a) producing liquid aerosol droplets from a solution comprising an ionically crosslinkable polyionic polymer into a continuous gas stream by using an ultrasonic nebulizer, wherein the solution of the ionically crosslinkable polyionic polymer is kept within a temperature of from 15 to 50°C;
 - (b) submerging the gas stream into a gelling solution comprising di-, multi- or polyvalent ions, whereby crosslinked polymer microspheres are formed, and
 - (c) separating the microspheres from the gelling solution.

67. (New) The process according to claim 66, wherein the ionically crosslinkable polymer is a polyanionic polymer and wherein the gelling solution comprises a polyvalent cation.

68. (New) The process according to claim 67, wherein the polyvalent cation of the gelling solution is selected from the group consisting of poly (allylamine hydrochloride), poly(ethylene imine), poly(diallyldimethylammonium chloride), polyamide-polyamine-epichlorhydrine, chitosan, amino-dextran, and protamine sulfate.

69. (New) The process according to claim 66, wherein the ionically crosslinkable polymer is a polyanionic polymer and wherein the gelling solution comprises di-, multi- or polyvalent cations.

70. (New) The process according to claim 69, wherein the polyanionic polymer is selected from the group consisting of anionic polysaccharides, a linear or branched polyacrylic acid, and polystyrene sulfonate.

71. (New) The process according to claim 70, wherein the anionic polysaccharide is selected from the group consisting of an alginic acid, a carrageenan, a cellulose sulphate, a dextran sulphate, a gellan, a pectin and water soluble salts thereof.

72. (New) The process according to claim 71, wherein the anionic polysaccharide is an alginic acid or a water soluble salt thereof.

73. (New) The process according to claim 69, wherein, in step (a), the polyanionic polymer is present in a concentration of from 0.1 % to 5.0 % by weight.

74. (New) The process according to claim 69, wherein the ion of the gelling solution is a metal cation selected from the group consisting of Pb^{2+} , Cu^{2+} , Ba^{2+} , Sr^{2+} , Cd^{2+} , Ca^{2+} , Zn^{2+} , Co^{2+} , and Ni^{2+} .

75. (New) The process according to claim 74, wherein the metal cation of the gelling solution is selected from the group consisting of Ba^{2+} , Sr^{2+} , and Ca^{2+} .

76. (New) The process according to claim 75, wherein the metal cation of the gelling solution is Ca^{2+} .

77. (New) The process according to claim 66, wherein the gelling solution additionally comprises up to 1 % by weight of a surfactant.

78. (New) The process according to claim 77, wherein the surfactant is present in an amount of from 0.02 to 1.0 % by weight.

79. (New) The process according to claim 77, wherein the surfactant is selected from the group consisting of polyoxyethylene-sorbitans and surfactants comprising a block copolymer of ethylene oxide and/or propylene oxide.

80. (New) The process according to claim 69, wherein, in step (a), the solution comprises of from 0.75 % to 1.5 % by weight low viscosity sodium alginate, wherein the cation is Ca^{2+} ; and wherein the gelling solution comprises of from 0.05 % to 0.15 % by weight of poly(oxyethylene)20-sorbitane monolaureate.

81. (New) The process according to claim 66, wherein the solution according to step (a) is kept within a temperature of from 25 to 35°C.